SERVICE BULLETIN

MANDATORY MANDATORY MANDATORY

INSPECTION OF MAIN ROTOR BLADE ROOT FITTING ASSEMBLIES; INSPECTION OF MAIN ROTOR HUB LEAD–LAG LINK ASSEMBLIES.

* Supercedes Service Information Notices HN–211.5, DN–51.7, EN–42.5 and FN–31.5, dated 8 September 1999 and the mandatory blade removal and inspection requirements of PART I of DN–183.1, EN–75.1 and FN–62.1, dated 26 August 1992. This Notice also cancels Service Information Letters HL–114.1, DL–89.1, EL–40.1 and FL–33.1, dated 01 March 1991.

Compliance with the requirements of this Notice allows cancelling the requirements of PART I DN–183.1, EN–75.1 and FN–62.1 (removal of 369D21100–515 and 369D21102–501 main rotor blades every 25 hour to perform a visual inspection of those blades). Operators are still required to rework their 369D21100–515 and 369D21102–501 blades per the requirements of PART II of DN–183.1, EN–75.1 and FN–62.1.

1. PLANNING INFORMATION

A. Aircraft Affected:

All 369 Series helicopters, including the 369A (OH–6A) Series helicopter, equipped with any of the following:

B. Assembly/Components Affected By This Bulletin:

All 369A1100–BSC thru –505, –601 and –603, 369D21100–BSC thru –515 and 369D21102–BSC and –501 main rotor blades.

All 369A1234, 369A1203–BSC, –3,–11, and 369H1203–BSC,–21 and –31 lead–lag link assemblies.

NOTE: All 369D21100 main rotor blades, including those blades with an “M” after the serial number, and lead–lag link assemblies listed above must be inspected.

C. Reason:

Operators of 369 Series helicopters have experienced cracks in the lug area of the main rotor blade root fittings and lead–lag links.

Failure to follow this Service Bulletin could result in loss of main rotor blade. Movement of the bushings within the lug could lead to cracking of the root fitting. Therefore, all of the above listed main rotor blades shall be inspected for cracks in the area of the root fittings and lead–lag links and for movement of the bushings in the root fittings.

CAUTION Cracked main rotor blade root fittings or lead–lag links may produce a sudden change or increase in helicopter vibration. If operators experience a sudden onset of unusual or excessive vibration, a precautionary landing must be made. No further flights shall be attempted until the cause of the vibration has been identified and corrected.

D. Description:

This revision reduces the time of compliance for PART II from 25 hours to 15 hours for the 369A1234, 369A1203–BSC, –3 and –7, and 369H1203–BSC and –21 lead–lag links with greater than 500 hours. The previous revision added procedures to apply a slippage mark to root fitting bushings and lug surfaces and to periodically inspect those slippage marks to aid operators in accurately detecting bushing movement. Movement of the bushings may cause or be caused by root fitting cracking.

PART I of this notice lists a procedure for the removal of the main rotor blades to inspect for cracks in the root fitting attach lugs or the main rotor hub lead–lag link attach lugs, and/or bushing movement. In addition, a procedure is also provided to apply a protective coating to seal the junctions between the stainless steel bushings and attach lugs. Finally, if a slippage mark has not already been applied, this notice provides a procedure for applying a slippage mark across all four bushings and root fitting lugs. DO NOT remove bushings.

PART II of this Notice provides instructions for periodic visual inspections of the root fitting attach lugs and lead–lag link attach lugs to check for cracked or broken lugs and for movement of the bushings. It also emphasizes the importance of corrosion prevention in the area of the main rotor hub.

E. FAA Approval:

The design engineering aspects of this notice have been shown to comply with the applicable Federal Aviation Regulations, and are FAA approved.

F. Manpower:

N/A

G. Time of Compliance:

PART I – Shall be accomplished within the next 25 hours of helicopter operation and/or prior to installation of main rotor blades and main rotor hub assemblies in spares inventories and every 100 hours thereafter.

PART II – Shall be accomplished at each 25 hour interval of operation for aircraft equipped with 369A1100–BSC thru –505, –601 and –603, 369D21100–BSC thru –515 and 369D21102–BSC and –501 main rotor blades and/or 369H1203–31 lead–lag link assemblies.

For aircraft equipped with 369A1234, 369A1203–BSC, –3 and –7, and 369H1203–BSC and –21 lead–lag links, accomplished at each 25 hour interval of operation up to 500 hours and every 15 hours thereafter until retirement of lead–lag links.

(l) Denotes portion of text added or revised.

H. Material/Part Availability:

Contact MDHI Warranty and Repair Dept.

PARTS			
Nomenclature	**Part No.**	**Qty.**	**Source**
Link, lead–lag	369H1203–51	A/R	MDHI
Main Rotor Blade	369A1100–511	A/R	MDHI
Main Rotor Blade	369D21100–523	A/R	MDHI
Main Rotor Blade	369D21102–523	A/R	MDHI

MATERIAL	
Nomenclature	**Source**
Epoxy paint (white, florescent yellow or orange) DO NOT use torque seal.	Commercial
Sealer, corrosion inhibiting (MIL–S–81733, Type II–2) (RM007361) P/N PR1436–G	Product Research 2919 Empire Avenue Burbank, CA 91504 or Coast ProSeal 19451 Susan Rd. Compton, CA 90221
Primer (MIL–P–8585) (RM009222) or	Commercial
(Alternate) Sealer, (MIL–P–23377, Type 2, Class 2)	Commercial

I. Tools and Equipment:

TOOLS AND EQUIPMENT	
Nomenclature	**Source**
Magnifying glass – 5X	Commercial
Kit, dye penetrant (MIL–I–25135)	Commercial

J. Weight and Balance Data:

Weight and balance not affected.

K. Reference:

369H Basic HMI (CSP–H–2) Revised 23 August 1996, or latest revision
369D/E/FF – 500/600N HMI (CSP–HMI–2) Revised 1 June 1999, or latest revision

2. ACCOMPLISHMENT INSTRUCTIONS

A. PART I - 100-HOUR BLADE REMOVAL/INSPECTION

(1). Remove affected main rotor blades per applicable HMI.

(2). Using a bright light and 5X magnifying glass, visually inspect the attach lugs of all affected main rotor blade upper and lower root fittings and main rotor lead-lag links for broken or cracked lugs, corrosion or other damage to the lug areas (Ref. Figure 1). Pay particular attention to area around attach pin hole bushings in the lugs. Pay particular attention to the cross-hatch areas shown in Figure 2. If slippage marks have already been applied, inspect the root fitting for any indication of movement of the bushings. No movement is allowed. Return main rotor blades that have root fitting bushing movement to MDHI for possible rework. If slippage mark is degraded, reapply per steps (5). and (6). (Ref. Figure 2).

NOTE: Do not remove bushings or corrosion inhibiting sealer.

CAUTION

- If a cracked or broken lug is noted in main rotor blade upper or lower root fittings, replace main rotor blade ***before further flight***.
- If a cracked or broken lug is noted in main rotor lead-lag links, replace or repair main rotor hub per the applicable HMI ***before further flight*** (see note below).
- If a crack is suspected in either the main rotor blade or lead-lag link attach lug, perform dye penetrant inspection per MIL-I-25135 of the lug. If a crack is noted, replace main rotor blade or replace or repair main rotor hub per applicable HMI ***before further flight*** (see note below).

(3). Inspect lead-lag link blade attach pin hole bushings for any indications of movement of the bushings in the links. If any of the bushings have movement, replace the link.

NOTE: Lead-lag link assemblies may only be replaced by MDHI authorized personnel or under MDHI supervision. Contact your local MDHI Field Service Representative for further information.

CAUTION If required, apply a light but thorough coat of sealer or zinc-chromate primer around the bushings. Note that excessive amounts of sealant or zinc-chromate primer around the bushings are not desirable and can unbalance the main rotor system.

(4). If corrosion inhibiting sealer (per MIL-S-81733, Type II-2) has become loose, clean and then seal all junctions between all the steel bushings and the main rotor blade root fitting attach lugs with a film of corrosion inhibiting sealer or zinc-chromate primer without removing the bushings.

(5). For the main rotor blade root fitting attach lugs, carefully remove sufficient amount of sealant and paint from only the bushing in the area where the slippage mark is to be applied, if not already done, (Ref. Figure 2). Using isopropyl alcohol, clean the area where the slippage mark is going to be applied to allow adequate adherence of epoxy paint.

NOTE:

- Locate slippage mark in a position that can be viewed at subsequent inspections with main rotor blade installed in the hub.
- Ensure that slippage mark is applied to bushing and upper and lower root fitting inside surfaces as shown in Figure 2.

(6). Apply epoxy paint slippage marks to four locations as shown in Figure 2.

NOTE:

- DO NOT use torque seal.
- Ensure that slippage mark can be observed for inspection when the blades are installed. Slippage marks should not be applied to cross-hatch areas shown in Figure 2 to preclude masking possible cracks.

(7). Install main rotor blades per applicable HMI.

(8). Record compliance with PART I of this Notice in the Compliance Record section of the helicopter Log Book.

B. Part II - 15/25-Hour Inspection:

NOTE: Main rotor blades and hub assemblies installed on helicopters operating in a salt water or corrosive environment should be cleaned and washed on a daily basis as a preventative measure to arrest corrosion. Refer to applicable HMI (Tri-Flow wash procedure) or HN-214, DN-154, EN-44 or FN-33, Service Information Notices.

(1). Visually inspect exposed portion of all installed main rotor blade upper and lower root fitting attach lugs, and main rotor hub lead-lag link attach lugs, for broken or cracked lugs, corrosion or other damage to the lug areas. Using a bright light, inspect slippage marks on the root fitting bushings to ensure there has been no movement of the bushings. If bushings have moved, replace main rotor blade ***before further flight*** (Ref. Figure 2). Return those main rotor blades where bushing movement has occurred to MDHC for possible rework.

NOTE: If movement is suspected but cannot be verified with the blades installed, remove those blades and inspect bushings for movement.

CAUTION

- If a cracked or broken lug is noted in main rotor blade upper or lower root fittings, replace main rotor blade ***before further flight***.
- If a cracked or broken lug is noted in main rotor lead-lag links, replace or repair main rotor hub per the applicable HMI ***before further flight*** (see note below).
- If a crack is suspected in either the rotor blade or lead-lag link attach lug, perform dye penetrant inspection per MIL-I-25135 of the lug. If cracking is noted, replace main rotor blade or replace or repair the main rotor hub per the applicable HMI ***before further flight*** (see note below).

NOTE: Lead-lag link assemblies may only be replaced by MDHI Authorized personnel or under MDHI supervision. Refer to your local MDHI Field Service Representative for further information.

(2). Record compliance with PART II of this Notice in the Compliance Record Section of the helicopter Log Book.

3. POINTS OF CONTACT

For further information, contact your local MDHI Field Service Representative (refer to the latest revision of the Product Support handbook for address and telephone numbers) or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone: 1-800-388-6342 or (480) 891-6342.

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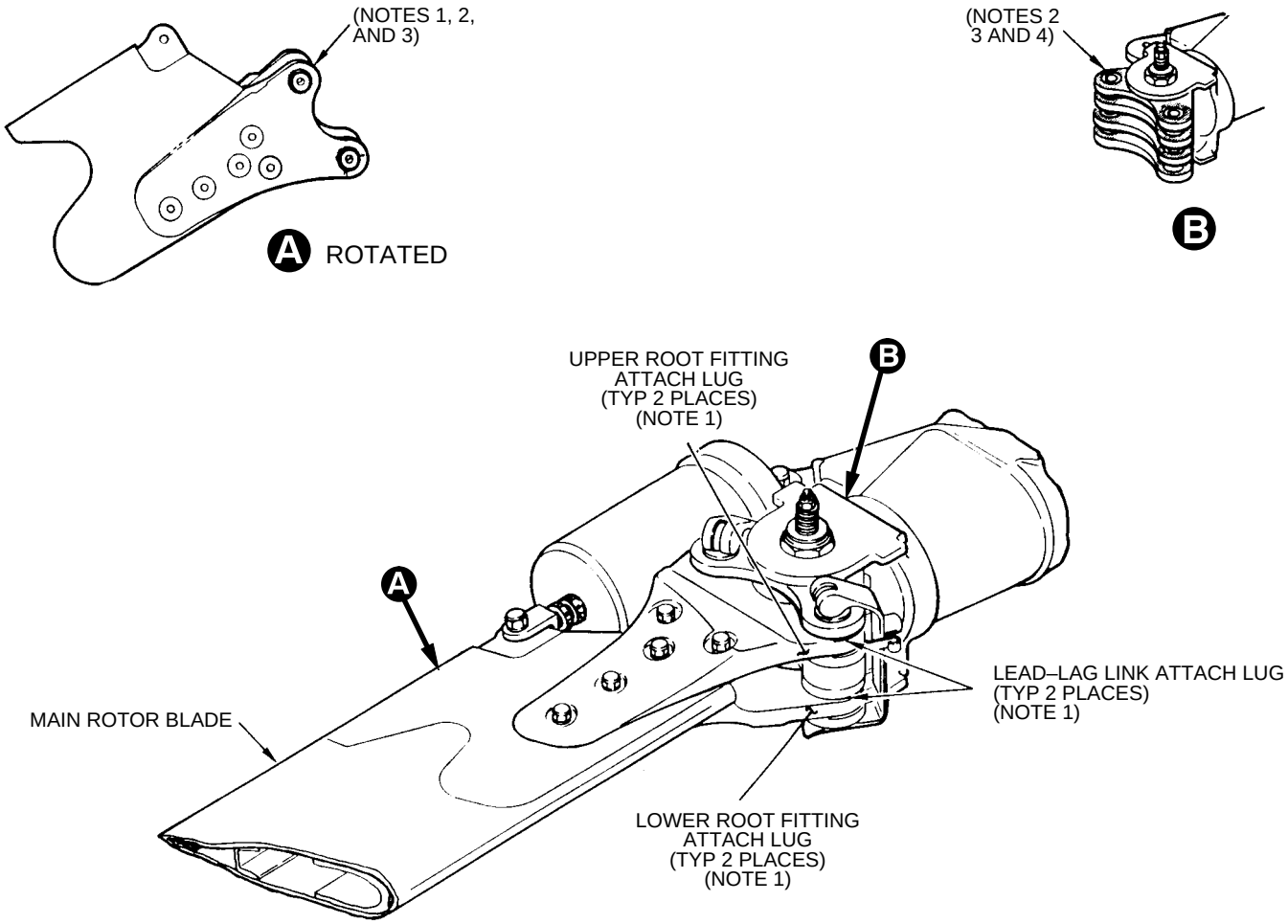

NOTES:

1. VISUALLY INSPECT AREAS OF ALL ROOT FITTINGS AND LEAD-LAG ATTACH LUGS FOR CRACKS OR BREAKS. INSPECT BLADE ATTACH BUSHINGS FOR LOOSENESS. IF LOOSE, REPLACE LEAD-LAG LINKS (REFER TO TEXT).
2. PAY PARTICULAR ATTENTION TO AREA AROUND ATTACH PIN HOLES IN LUGS.
3. SEAL ALL JUNCTIONS BETWEEN BUSHINGS AND ATTACH LUGS WITH SEALER OR PRIMER (REFER TO MATERIALS TABLE).
4. LEAD-LAG LINK ASSEMBLIES ARE SUBASSEMBLIES OF THE MAIN ROTOR HUB ASSEMBLY.

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Figure 1. Inspection of Main Rotor Blade Root Fitting Attach Lugs and Main Rotor Hub Lead-Lag Link Assemblies

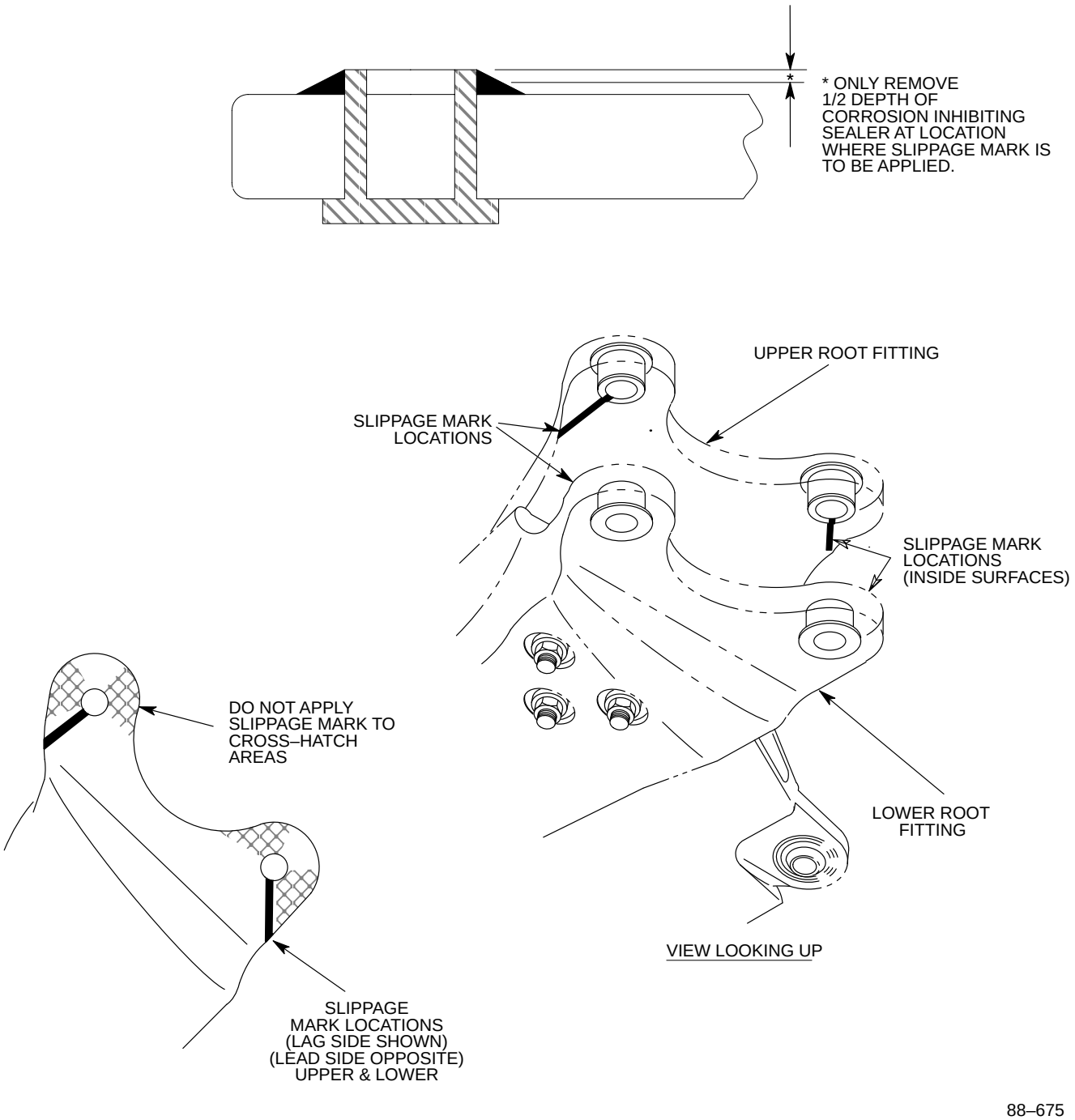

Figure 2. Application of Slippage Mark to M/R Blade Bushings and Root Fittings